



# ELECTRANET'S PROPOSED AMENDMENTS TO THE ELECTRICITY TRANSMISSION CODE

*Final Decision*

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The Essential Services Commission of South Australia is the independent economic regulator of the electricity, gas, ports, rail and water industries in South Australia. The Commission's primary objective is the *protection of the long-term interests of South Australian consumers with respect to the price, quality and reliability of essential services*. For more information, please visit [www.escosa.sa.gov.au](http://www.escosa.sa.gov.au).

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## GLOSSARY OF TERMS

<b>ACR</b>	Adelaide Central Region
<b>AEMC</b>	Australian Energy Market Commission
<b>AEMO</b>	Australian Energy Market Operator
<b>AER</b>	Australian Energy Regulator
<b>AMD</b>	Agreed Maximum Demand
<b>CBD</b>	Central Business District
<b>Code</b>	Electricity Transmission Code
<b>Commission, ESCOSA</b>	Essential Services Commission of South Australia
<b>DNSP</b>	Distribution Network Service Provider
<b>ESC Act</b>	Essential Services Commission Act 2002
<b>MVA</b>	Mega Volt Amps
<b>ESDP</b>	Electricity System Development Plan
<b>MW</b>	Mega Watt – 1,000,000 Watts
<b>N reliability</b>	Means the transmission system is able to supply maximum demand provided all of the network elements are in service
<b>N–1 reliability</b>	Means the ability of the transmission system to continue to supply the contracted loads connected to the system even if any one element were to fail
<b>NEM</b>	National Electricity Market
<b>NER</b>	National Electricity Rules
<b>RIT-T</b>	Regulatory Investment Test - Transmission
<b>SA</b>	South Australia
<b>SCER</b>	Standing Council on Energy Resources
<b>TNSP</b>	Transmission Network Service Provider
<b>USE</b>	Unserved Energy
<b>VCR</b>	Value of Customer Reliability

# 1. INTRODUCTION

The Essential Services Commission (**Commission**) is an independent regulator established under the *Essential Services Commission Act 2002 (ESC Act)*, with the primary statutory objective of protecting the long-term interests of South Australian consumers with respect to the price, quality and reliability of essential services.

For the purposes of the ESC Act, electricity transmission services are an essential service and the Commission has specific functions and powers in respect of the provision of those services. In particular, the Commission has the function of licensing transmission businesses and, associated with that function, also has regulatory powers to set binding standards of service with which licensees must comply. Those standards may be set within the terms of a licence or may be embedded within an industry code (made by the Commission under Part 4 of the ESC Act) – compliance with industry codes, so made, is also a condition of licence.

ElectraNet Pty Ltd (**ElectraNet**) operates the main electricity transmission network in South Australia and is licensed by the Commission pursuant to Part 3 of the *Electricity Act 1996* to do so. As a condition of licence, ElectraNet is required to comply with the Electricity Transmission Code (**code**), which has been made by the Commission pursuant to Part 4 of the **ESC Act**.<sup>1</sup> Overall, the effect of the code is to require ElectraNet to plan, develop and maintain its transmission system such that the code's standards are met in relation to each exit point or group of exit points in accordance with code requirements.

ElectraNet, the monopoly transmission service provider whose revenues are determined on a five-yearly *ex ante* basis by the Australian Energy Regulator (**AER**) in accordance with the National Electricity Rules (**NER**), seeks up-front certainty about the relevant service standards under the code for any given five-year regulatory period (with the next regulatory period to commence from 1 July 2013). This allows cost variations arising from any service standard variations (whether upwards or downwards) to be taken into account by ElectraNet when preparing its revenue submission under the NER.

To assist ElectraNet in preparing its revenue submission to the AER for the five-year regulatory period 1 July 2013 to 30 June 2018, the Commission undertook a review during 2010 and 2011 of the need to vary any of the existing exit point reliability standards for that period (as compared with the standards then existing under the code). The Commission's review was based on a report prepared by the Australian Energy Market Operator (**AEMO**) which involved close collaboration and consultation with ElectraNet.<sup>2</sup>

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1 A copy of ElectraNet's transmission licence is available from the Commission's website at <http://www.escosa.sa.gov.au/library/080703-ElectricitySystemControlLicenceVaried-ElectraNet.pdf>, with the Electricity Transmission Code also available at <http://www.escosa.sa.gov.au/electricity-overview/codes-guidelines-rules/electricity-codes.aspx>.

2 AEMO's report is available on the Commission's website at <http://www.escosa.sa.gov.au/projects/165/review-of-the-electricity-transmission-code.aspx>

The Commission's review of the transmission code, involving public consultation and stakeholder submissions on an Issues Paper<sup>3</sup> and subsequent Draft Decision,<sup>4</sup> was completed in February 2012 when the Commission published its Final Decision<sup>5</sup> and revised code (TC/07),<sup>6</sup> which was to take effect from 1 July 2013.

ElectraNet subsequently submitted its Regulatory Proposal for the 2013-2018 regulatory periods to the AER in May 2012.<sup>7</sup>

The AER released its draft revenue determination<sup>8</sup> for ElectraNet on 30 November 2012.

On 26 November 2012 ElectraNet submitted a new proposal to the Commission, seeking further amendments to the recently revised code TC/07.

On 14 December 2012, ElectraNet submitted further material seeking additional amendments to the revised code. On 22 January 2013, ElectraNet provided further explanatory material in relation to those proposed amendments.

The Commission published ElectraNet's proposed amendments, receiving one submission, from AEMO.

The AER released its final revenue determination<sup>9</sup> for ElectraNet on 30 April 2013.

During the Draft Decision consultation process, the Commission also received a request from ElectraNet to rename the Kanmantoo Mine connection point to Kanmantoo and to add a Category 1 connection point to be known as Back Callington, which provides electricity to a mining customer in the Callington area. These amendments are non-controversial and will be included with the amendments set out in this Final Decision.

Following its own consideration of the issues, the Commission published a Draft Decision in April 2013, receiving four submissions. Having regard to the submissions and its own further deliberations, the Commission has prepared this Final Decision on ElectraNet's proposed amendments to the Electricity Transmission Code.

This Final Decision should be read in conjunction with the Commission's Draft Decision.

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3 Commission's Issues Paper refer: <http://www.escosa.sa.gov.au/library/110412-ReviewElectricityTransmissionCode-IssuesPaper.pdf>

4 Commission's Draft Decision refer: <http://www.escosa.sa.gov.au/library/110915-ReviewElectricityTransmission-DraftDecision.pdf>

5 Commission's Final Decision refer: <http://www.escosa.sa.gov.au/library/120217-ReviewElectricityTransmission-FinalDecision.pdf>

6 Commission's revised code refer: [http://www.escosa.sa.gov.au/library/120217-ElectricityTransmissionCode-TC07\\_0.pdf](http://www.escosa.sa.gov.au/library/120217-ElectricityTransmissionCode-TC07_0.pdf)

7 ElectraNet's original revenue proposal refer: <http://www.aer.gov.au/sites/default/files/ElectraNet%20Revenue%20Proposal%20.pdf>

8 AER's Draft Decision refer: <http://www.aer.gov.au/sites/default/files/ElectraNet%202013%20-%20AER%20-%20draft%20decision%20-%2030%20November%202012.pdf>

9 AER's Final Decision refer: <http://www.aer.gov.au/sites/default/files/Final%20decision%20%2811%20April%202008%29.pdf>

## 2. SUBMISSIONS RECEIVED

Four submissions were received on the Commission's Draft Decision on ElectraNet's proposed amendments to the Electricity Transmission Code.<sup>10</sup>

Company	Dated
Energy Consumers Coalition of South Australia (ECCSA)	1 May 2013
ElectraNet	2 May 2013
SA Power Networks	3 May 2013
South Australian Council of Social Service ( <b>SACOSS</b> )	6 May 2013

The Commission has given consideration to all issues raised in submissions during its review process, including ElectraNet's initiating submission. While the Commission has not adopted all positions put forward, all submissions have been helpful in assisting the Commission's identification and consideration of relevant issues and have enabled the Commission to gain a comprehensive understanding of views of the respondents.

Where appropriate, the Commission has, either by direct quotation or by reference to themes or point of views, acknowledged certain arguments and submissions in the text, to assist stakeholders in understanding any new positions it has reached. However, failure to reference an argument or submission does not mean that the Commission has not taken that argument or submission into account in making its decision.

The matters raised by ElectraNet, and the submissions received on the Commission's Draft Decision, are set out in the following sections with the Commission's final decision on each issue.

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<sup>10</sup> Submissions available on the Commission's website [www.escosa.sa.gov.au](http://www.escosa.sa.gov.au)

## 3. FINAL DECISIONS ON PROPOSALS

### 3.1 *Transition to new arrangements*

ElectraNet proposed transitional provisions be included in the code to temporarily extend the effect of rectification provisions in the current code where the contracted agreed maximum demand for regulatory years 2013-14 to 2015-16 materially exceeds the exit point demand forecasts as they stand at 1 July 2013.

The rectification periods for any breach of a reliability standard under the current code are not directly tied to an obligation to plan on the basis of Forecast Agreed Maximum Demand (**FAMD**). ElectraNet is of the view that the revised code is not retrospective in its effect as at 1 July 2013 and, as a result, there will not be a FAMD in place under the revised code that can be subject to an identifiable or unidentifiable notified change in forecast demand for the regulatory years 2013-14 to 2015-16.

#### *Commission's Draft Decision:*

*ElectraNet will be required to negotiate in good faith with SA Power Networks to determine the forecast that is to apply to clause 2.11 of the revised code TC/07. For the purpose of transitional arrangements, the derived FAMD for each year 2013/14 to 2015/16 is to be adopted, based on current planning data as derived under the joint planning arrangements in accordance with the NER. The Commission will amend the code to reflect this transitional approach.*

#### 3.1.1 *Energy Consumers Coalition of South Australia*

No comment was provided by ECCSA.

#### 3.1.2 *ElectraNet*

ElectraNet accepted the Commission's transitional arrangements as explained in the Draft Decision and will negotiate a FAMD, to apply to the years 2013-14, 2014-15 and 2015-16, with SA Power Networks. The demand forecast will be based on a 10% Probability of Exceedence (**POE**) methodology as set out in ElectraNet's revised revenue proposal to the AER.

ElectraNet noted that it will work with ESCOSA in relation to the required amendments to formalise the FAMD under the code.

#### 3.1.3 *SA Power Networks*

No comment was provided by SA Power Networks.



### 3.1.4 South Australian Council of Social Service

SACOSS noted the Commission's position and the fact that ElectraNet has accepted that position. SACOSS noted that it is comfortable with the Commission's approach as set out in the Draft Decision.

### 3.1.5 Reasons for decision

ElectraNet based its proposal on the need for transitional arrangements to implement the amended FAMD obligations under the code. The submissions received support the Commission's Draft Decision as detailed above.

As noted in the Commission's Draft Decision, ElectraNet is informed about forecast exit point demands although it is not yet required to agree or plan to them. ElectraNet participates in joint planning sessions every year with SA Power Networks when new exit point forecasts are prepared. Therefore, FAMD should be known to ElectraNet, given the joint planning between ElectraNet and SA Power Networks required by the NER, and can be determined by negotiation with SA Power Networks for the regulatory years in question. The Commission has concluded that it is appropriate to amend the code to give effect to these planning processes to address the transitional issues identified by ElectraNet.

The Commission notes that the FAMD must be a reasonable expectation of the demand negotiated and agreed in good faith between the parties.

### 3.1.6 Final Decision:

**The Commission will add the following clause 2.11.3 to the code to provide for transitional arrangements to forecast demand for the first three years of the reset period.**

**2.11.3 For the purpose of transitional arrangements, *ElectraNet* will negotiate in good faith with *SA Power Networks* to determine the *forecast agreed maximum demand* at an *exit point* or group of *exit points* that is to apply to this clause 2.11 for each year 2013/14 to 2015/16.**

## 3.2 Unanticipated demand increases

ElectraNet proposed the amendment of clause 2.11.2 which provides for responding to changes in demand that were unidentified in the planning process. ElectraNet proposed that the obligation should apply to any change in FAMD that is "*not reasonably expected to occur based on the information available*" to ElectraNet at the time the initial forecast was provided, as opposed to applying to changes that are termed "*identifiable*" in TC/07.

ElectraNet put the view that there is a range of circumstances in which a possible change to forecast agreed maximum demands may have been strictly identifiable but may not have been reasonably expected to eventuate in the circumstances. ElectraNet submitted that

clause 2.11.2 does not provide sufficient protection for certain demand increases that were not reasonably expected to occur.

*Commission's Draft Decision:*

*To maintain the effect and the intent of clause 2.11.2 of the code, the Commission does not intend to amend the code as proposed by ElectraNet.*

### 3.2.1 Energy Consumers Coalition of South Australia

No comment was provided by ECCSA.

### 3.2.2 ElectraNet

ElectraNet submitted that replacing “*not able to be identified*” with not “*reasonably expected to occur*”, in clause 2.11.2, is preferable. ElectraNet contended that “*reasonably expected to occur*” means that the likelihood of the event occurring would be assessable based on evidence or objective reasoning.

ElectraNet recognised that FAMD is a planning objective to ensure that sufficient capacity will be available to supply at the time of contracting AMD; however it noted that this should be achieved in an efficient manner and customers should not be exposed to costs of transmission work for loads that do not eventuate.

ElectraNet contended that amending the terminology as described above would allow ElectraNet sufficient time to respond to changes in demand once it becomes clear there is a high probability of the demand change eventuating.

### 3.2.3 SA Power Networks

No comment was provided by SA Power Networks.

### 3.2.4 South Australian Council of Social Service

SACOSS noted that some disagreement remains over the wording of clause 2.11.2 of the code but was not convinced that the proposed changes can be justified on the grounds of new information or developments since the process for review was established to revise the code prior to a revenue determination.

SACOSS considered it valuable to exchange views on this matter on the public record, but does not support a change of the code at this point in time.

### 3.2.5 Reasons for decision

As noted in the Draft Decision, ElectraNet’s request for amendments to the code submitted that there is a risk that the obligation to deliver a network that satisfies the forecast demand may be compromised by changes in demand at short notice.

Clause 2.11 of the code places an obligation on ElectraNet to provide sufficient capacity following changes in agreed forecast maximum demand. The Draft Decision noted however, that the intent of clause is based on FAMD being negotiated in advance by the parties in good faith under commercial operating conditions and that the obligation on ElectraNet is one of planning. The risk that ElectraNet raises relates more to the annual actual contracted agreed maximum demand obligations arising under clauses 2.5 to 2.9 of the code (which establish the exit point reliability standards). It is the Commission's view that clause 2.11.2 should provide for unidentified demand changes (increases or decreases); i.e., planning for "drop-in" demand increases or developments that may or may not eventuate.

In its submission to the Draft Decision, ElectraNet proposed that replacing "*identified*" with "*reasonably foreseeable*", provides for sufficient time for ElectraNet to respond to demand changes when such a change has a high probability of eventuating.

ElectraNet has focussed on "*time to respond to a drop in load*". It is understood that this is on the basis that some projects that have been "*identified*" at the broad level are, on balance, unlikely to proceed.

The conundrum is: does the "*agreement*" process allow for "*identified*" projects to be excluded; or because they have been identified, are they included despite being not "*reasonably expected to occur*"? This may indicate the challenges that both parties face during the negotiation process and that a change to the wording to include "*reasonably expected to occur*" would further facilitate these discussions.

There is a risk that a committed project might be excluded, based on reasonable expectation of it not proceeding; but, if it did proceed, the time frame for the completion of a project with material electricity demand would be relatively long (i.e., time enough to at least comply with clause 2.11). The intent of clause 2.11 is to ensure that ElectraNet plans to an appropriate level of forecast demand. The Commission now accepts that ElectraNet's proposal may assist in reaching that outcome.

In acceding to ElectraNet's proposal, it may be appropriate to include a reporting obligation in Electricity Industry Guideline No.3 so, that on a quarterly basis, the projects that have been excluded are reported to the Commission. Such reporting could include details such as the size, timing, and reasons for exclusion and potential triggers for future inclusion.

This would reinforce the Commission's confidence in the effect of the proposed amendment in respect to planning and managing the reliability and security of supply to customers by both parties. Additionally, it may encourage ElectraNet and SA Power Networks to develop transparent formal criteria against which the commitment status of all projects could be assessed.

The Commission notes SACOSS's submission raising its concern with the proposed amendment; however, the Commission has now been persuaded by ElectraNet's submission that it is appropriate to amend the wording of clause 2.11 to minimise the challenges encountered in the negotiation and planning processes. The amendment may also encourage ElectraNet and SA Power Networks to be more responsive to changes in demand,

both in an upward and downward direction. It may then be appropriate, if the “*reasonably expected to occur*” approach is adopted, and assuming as a result that the planning process is more responsive, that the compliance timeframes may be able to be reduced.

### 3.2.6 Final Decision

**The Commission has decided to amend the wording at the beginning of clause 2.11.2 to read:**

**Where a change in forecast agreed maximum demand at an exit point or group of exit points under clause 2.11.1 was not reasonably expected to occur by the transmission entity in the forecast agreed maximum demand 3 years prior, a transmission entity must:**

## 3.3 Basis of demand forecasts

ElectraNet proposed amendments to the definitions of agreed maximum demand and forecast agreed maximum demand and clauses 2.11.1, 2.11.2 and 6.3.1 of the code. In particular, ElectraNet sought for the Commission to mandate a 10% Probability of Exceedance (**POE**) demand forecasting methodology.

ElectraNet noted that it has been the practice of SA Power Networks to provide peak demand forecasts to ElectraNet for transmission exit points. These forecasts, it notes, represent more extreme conditions than the 10% POE conditions used in other circumstances to develop demand estimates.

ElectraNet’s proposed amendment of the revised code is to apply 10% POE exit point demand forecasts as the basis of non-radial and regional exit point planning. However, ElectraNet acknowledged that this would involve a marginal increase in risk to supply reliability.

### *Commission’s Draft Decision:*

*The Commission has decided not to amend the transmission code to mandate a particular demand forecasting methodology for the purposes of clause 2.11 of the code at this time.*

### 3.3.1 Energy Consumers Coalition of South Australia

ECCSA submitted that ElectraNet’s direct connect customers should use the agreed Maximum Demand (**AMD**) for demand forecasts.

For SA Power Networks’ connection points, ECCSA argued that the summed contracted peak demands would overstate the demand requirements and therefore that methodology should not be used.

ECCSA considered that the approach should be consistent using the 10% POE forecast as provided by AEMO to avoid a disconnect in the processes. ECCSA noted however, that it believes the AEMO forecasts consistently overstate maximum demand.

The proposal to change to a 10% POE demand forecasting methodology was supported by ECCSA.

### 3.3.2 *ElectraNet*

ElectraNet proposed to use the allocation of connection points and demand as it submitted to the AER in its regulatory proposal. A sample calculation of the benefits of the reduction in peak demand for all consumers was provided, that demonstrated increased unserved energy costs of \$1.6 million per annum compared to a reduction in Transmission Use of System charges (**TUOS**) of \$16.3 million per annum.

ElectraNet noted the Commission's clarification that establishing FAMD and AMD are matters to be resolved by mutual agreement through negotiation between ElectraNet and SA Power Networks. It also noted that a Transmission Connection Agreement (**TCA**) exists between the parties for each connection point. ElectraNet would nevertheless prefer this detail was codified by the Commission.

### 3.3.3 *SA Power Networks*

SA Power Networks supported a shift to a "*likelihood of demand exceedence*" methodology which it believes will deliver an optimum balance between reliability and cost for consumers.

Such a practice, SA Power Networks argued, would be in line with Australian industry practice and, in this context, noted the Commission's reference to the AEMC review of National Framework for Transmission Reliability.

### 3.3.4 *South Australian Council of Social Service*

SACOSS is of the view that demand forecasting remains a concern. It submitted that revision of forecasts to a 10% POE is in the interests of consumers and considered ElectraNet has already delivered some benefits back to customers by adopting lower forecasts (10% POE) for the Regulatory Proposal.

SACOSS offered cautious support for the shift to a 10% POE forecasting methodology but saw no need to move at the present time with other reviews underway and some benefit already delivered.

### 3.3.5 *Reasons for decision*

The Commission notes the support by all respondents of the 10% POE forecasting methodology, albeit of differing levels. It also notes the strong support for awaiting the outcomes of the AEMC's Transmission Frameworks Review. ElectraNet currently relies on

demand forecasts provided by direct-connect (large) customers, SA Power Networks and AEMO. For example, SA Power Networks provided ElectraNet with 10% POE forecasts in November 2012 for use in the revised revenue proposal of January 2013.

The purpose of the top-down 10% POE forecast produced by AEMO for the state, and the prediction of 10% POE demands at the transmission/distribution interface for each connection point from SA Power Networks, are quite different. AEMO forecasts are primarily used for NEM-wide reliability planning for the assessment of the supply-demand balance against the “*reliability standard*” and for the analysis of the minimum reserve levels. The connection point forecasts produced by SA Power Networks are used for network planning purposes, i.e. for customer demand.

The AEMO forecasts are a strong driver for core network development, that is, the network that carries the power from the generators to the major load centres. Diversity of peak demand at the connection points is not specifically identified in the AEMO state forecast as it is assumed that the historic level of diversity is maintained. The rapid growth in domestic, and now industrial, rooftop solar installations may call this assumption into question.

In the past, the AEMO and SA Power Networks forecasts were reconciled to provide confidence in their application. More recently, with changes in the consumption patterns of customers in different sectors, that reconciliation has become challenging, with recent analysis showing that diversity is potentially increasing.

The 10% POE demand forecasts from SA Power Networks, provided in November 2012, were adopted by ElectraNet for the non-radial connection points (those required by the code to have duplicate line or transformer capability). However, for radial connection points without duplicate line or transformer capability (i.e. category 1 connection points), the peak demand forecast is to be used. That reportedly translated to a \$113 million reduction to capex for demand-driven network.

A change, such as the shift to 10% POE, could expose consumers to lower reliability and may result in reliability levels different to that prior to privatisation of the networks and should be tested against any related legislation.

Until ElectraNet applies the 10% POE forecasts determined by SA Power Networks for all connection points consistently, there is an inbuilt disparity between radial and non-radial sectors of the network that consumers may have difficulty understanding.

Most importantly, however, as noted in the Draft Decision, the ability to agree the FAMD and AMD through commercial negotiations between SA Power Networks and ElectraNet does not preclude the use of a 10% POE demand forecast. The Commission encourages the practice of commercial negotiation in this area, with a light-handed regulatory approach being adopted by not mandating a particular methodology in the code.

The Commission understands that ElectraNet proposes to use a mixed POE and peak demand approach as described in its Regulatory Proposal; the 10% POE demand projections will only be used for the categories 2 to 5 where there is redundant transformer and/or line

capability. The redundant supply requirements for these categories inherently reduce the probability of a failure affecting customer supply, but this is in contrast to a higher POE forecast. The code permits such an outcome under its current terms

The Commission could, in future, consider clarifying a maximum acceptable POE basis for connection point forecasts and that the actual basis used should be published for each connection point. This would, at least, highlight potential differences in basis for the FAMD/AMD such that consumers are aware that application of the 10% POE is not uniform.

The Commission does not find it is necessary to mandate a forecasting methodology at this time as ElectraNet proposes. The code is clear on the need to meet network reliability standards through a diligent bilateral planning and negotiation regime. The methodology is left to the network “*experts*” who are best placed to make the right decisions based on responsible and efficient business decisions in keeping with good industry practice.

### 3.3.6 Final Decision

**The Commission has decided not to amend the transmission code to mandate a particular demand forecasting methodology for the purposes of clause 2.11 of the code. There is no need for further clarification to the code as it already provides for flexibility in the demand forecasting negotiation process between the parties.**

**The Commission may consider clarifying a maximum acceptable POE basis for connection point forecasts in any future Electricity Transmission Code review.**

## 3.4 Economic augmentation

ElectraNet proposed that additional flexibility should be introduced into the reliability standards by amending the revised code to include a new clause 2.3.2 and 2.3.3 as detailed below:

***2.3.2 A transmission entity can request the Commission to exempt the transmission entity from its obligation to comply with a standard set out in clause 2.6, 2.7, 2.8 or 2.9 if the transmission entity reasonably believes that the additional cost to customers of complying with that standard cannot be economically justified taking into account the likely cost of complying with that standard and the likely increase in benefits to customers which will arise from compliance with that standard. The transmission entity must provide with its request such information and evidence as is reasonably required by the Commission to make its assessment under clause 2.3.3.***

***2.3.3 The Commission may, in its absolute discretion, exempt a transmission entity from compliance with all or part of a standard set out in clause 2.5, 2.6, 2.7, 2.8 or 2.9. An exemption may be granted subject to such terms***

ElectraNet put the view that the potential cost of maintaining existing reliability standards at individual exit points may not have been subject to comprehensive review under the current code framework.

ElectraNet argued that it is possible that significant investment (e.g. major line augmentations) may become necessary to maintain sufficient capacity to satisfy reliability standards, even if the forecast demand excursion causing the breach is very small and of a limited and short duration. The investment required to meet reliability standards that include these small demand excursions may not be economically justified on a cost benefit basis (based on expected hours of loss of supply and an estimate of the value of customer reliability).

These new clauses proposed by ElectraNet would empower the Commission to grant a dispensation from compliance with a reliability standard upon application from ElectraNet provided it can be demonstrated that a network or non-network solution to achieve compliance with a reliability standard should be deferred on an economic cost benefit basis.

#### *Commission's Draft Decision:*

*The Commission agrees that a comprehensive cost-benefit analysis is the basis on which exit point augmentations should be proven. However, the Commission has misgivings regarding the derivation of VCR as currently applied to South Australia and, given the current review which is underway by the AEMC; any amendments should be considered in accordance with recommendations of that review.*

*The Commission's decision is not to amend the code to enable consideration of dispensations requested as a result of a cost benefit analysis during a regulatory period, where the funding is set in accordance with a revenue proposal at the beginning of that period, and may result in a windfall gain to ElectraNet.*

#### **3.4.1 Energy Consumers Coalition of South Australia**

No comment was provided by ECCSA.

#### **3.4.2 ElectraNet**

ElectraNet submitted that the code should empower the Commission to be able to grant a dispensation from compliance with a reliability standard provided it could be demonstrated that a solution to achieve compliance should be on a deferred cost benefit basis. ElectraNet asserted that benefits of any capital deferrals would automatically flow through to electricity consumers through a lower regulated asset base and lower transmission charges from the commencement of the following regulatory control period.

ElectraNet noted that it can gain no benefit from the change in the 2013-2018 Regulatory Control period because its revised revenue proposal contains only the completion of load driven projects and no new augmentations.

The additional flexibility clause would only relate to proposed "contingent projects" in the short-term and contingent projects are only funded by customers once approved by the AER.



ElectraNet noted that the AEMC review of transmission reliability directed by the Standing Council on Energy and Resources (**SCER**) has commenced with the release of an issues paper.

On balance, ElectraNet accepted that the immediate need for the proposed amendment may no longer be necessary given the scope of the review now underway by the AEMC. ElectraNet stated that it will approach ESCOSA on any ETC compliance issues on a case by case basis should any issues arise in the forthcoming regulatory period.

### *3.4.3 SA Power Networks*

No comment was provided by SA Power Networks.

### *3.4.4 South Australian Council of Social Service*

SACOSS submitted that ElectraNet's response to the Commission's draft decision seems to accept that the need to amend the code has been subsumed by the scope of the AEMC's review of Transmission Reliability Frameworks. SACOSS agreed with that view and stated that it is participating in the AEMC review.

### *3.4.5 Reasons for decision*

The Commission notes that ElectraNet has accepted that consideration of its proposal should be deferred, given that a formal AEMC review has already commenced.

In its Draft Decision, the Commission accepted ElectraNet's strong representation regarding modification of the current planning approach, noting that it may well be a valid objective worthy of consultation.

However, planning standards for most states have been deterministic, and while it is feasible to translate a probabilistic approach into a deterministic standard, planning could be developed in a similar form to the planning standards developed for generation capacity and regional minimum reserve levels. For example, the target set by the Reliability Panel is to have no more than 0.002% unserved energy (**USE**) per annum for each region (and therefore for the National Electricity Market as a whole). Currently, unserved energy, which occurs as a result of inadequacy of supply at a transmission or generation level, is excluded from the reliability measures at a connection point level. SAIDI and SAIFI distribution standards are set across regions of SA, but not at a connection point level.

Using a similar approach at the connection point, as is used for the regional generation and transmission adequacy, may be beneficial in combination with other measures.

However, the AEMC's Transmission Frameworks Review may have significant impact on economic principles driving transmission network augmentation. That review, which looks at transmission reliability issues with a view to establishing nationally consistent standards, makes it appropriate for the Commission to have regard to the AEMC's findings, which might affect future code provisions. These will be dealt with at the next major code review, i.e. for the 2018-2023 regulatory reset period.

Finally, based on the clarifying information provided by ElectraNet in its submission to the Draft Decision, the Commission is satisfied that it may be possible to pass on savings to consumers; a concern it held in relation to the initial submission by ElectraNet.

### 3.4.6 Final Decision

**The Commission has decided not to amend the code to enable consideration of dispensations requested as a result of a cost benefit analysis during a regulatory period at this time.**

**The Commission will consider making amendments to the code in accordance with recommendations of AEMC's Transmission Frameworks Review once an approach to a comprehensive cost-benefit analysis for exit point augmentations is devised.**

## 3.5 Quality of supply and reliability

Clause 2.1.2 of the code requires ElectraNet to use its best endeavours to plan, develop and operate its transmission system so as to meet the reliability standards imposed by the Rules, such that there will be minimal requirements to shed load under normal and reasonably foreseeable operating conditions.

ElectraNet recommended that the intended operation of clause 2.1.2 be further clarified in order to ensure economic reliability outcomes. In particular, it proposed that the obligation to minimise load-shedding should specifically recognise that the use of a forecast agreed maximum demand based on a 10% POE forecast will marginally increase the possibility of a loss of supply, on an economic basis.

ElectraNet proposed amendments to clause 2.1.2 as follows:

*"...such that there will be minimal requirement to shed load under normal and reasonably foreseeable operating conditions taking into account the **forecast agreed maximum demands** and the principles set out in clauses 2.3.2 and 2.3.3."*

### Commission's Draft Decision

*The Commission has decided not to amend clause 2.1.2 of the code because the amendment, as proposed, is dependent on outcomes of a broader review by the AEMC. It may also affect the current level of reliability afforded under the current code provisions.*

### 3.5.1 Energy Consumers Coalition of South Australia

No comment was provided by ECCSA.

### 3.5.2 ElectraNet

ElectraNet’s submission recognised its obligations under clause 2.1.2 to minimise the requirement for load shedding under normal and reasonably foreseeable operating conditions.

ElectraNet noted from the Draft Decision, that it is not prevented from adopting a 10% POE forecasting methodology. However, ElectraNet submitted that clause 2.1.2 could contain a specific reference to the use of a probabilistic demand forecast or that it could specifically clarify that it does not preclude adopting a probabilistic demand forecast (e.g. 10% POE).

### 3.5.3 SA Power Networks

No comment was provided by SA Power Networks.

### 3.5.4 South Australian Council of Social Service

SACOSS agreed that clarifications in the Draft Decision have been helpful and supported the view that no changes to the code are necessary at this point in time. SACOSS noted that ElectraNet’s response to the Commission’s Draft Decision appeared to accept that the need to amend the code has been moderated by the clarifications included in the Draft Decision.

### 3.5.5 Reasons for decision

The Commission notes that, in its submission, ElectraNet quoted the AER’s final decision<sup>11</sup> in support of its proposal. However, the complete opening paragraphs of the AER’s decision (which were omitted from ElectraNet’s submission) demonstrate that the AER recognised that the code refers to an AMD but goes no further to define its basis other than to “*meet the NER standards*”.

*“The Electricity Transmission Code requires ElectraNet to use its best endeavours to plan, develop and operate its transmission system and network to meet the NER standards in relation to the quality of its services and reliability of its network.*

*Subject to ElectraNet’s obligation to reliably supply contracted AMD, it must plan, develop and operate its:*

- *network such that there will be no requirement to shed load to achieve the NER standards; and*
- *systems such that there will be minimal requirements to shed load.*

*However, the Electricity Transmission Code only requires ElectraNet to plan its network and systems to minimise or shed load ‘under normal and reasonably foreseeable operating conditions’.*

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<sup>11</sup> AER Final Decision, ElectraNet Transmission Determination 2013-14 to 2017-18, April 2013, p92.

ElectraNet has proposed a category-specific interpretation of the basis for the AMD, where the 10% POE is only applied to connection point categories 2, 3, 4 and 5, while category 1 remains at the SA Power Networks peak demand forecast.

The Commission's Draft Decision also highlighted the provisions of clause 2.1.2 that ensures ElectraNet will not shed load at one exit point to maintain reliability at a more critical exit point in the normal course of operating its network. On the other hand, ElectraNet noted the 10%POE demand forecasting adds a degree of risk to level of reliability.

The Commission has made the Final Decision (in section 3.3) not to introduce a 10% POE demand forecasting, while noting that the code expects ElectraNet to agree on the methodology with its customers. The Commission is still of the view that such a decision would be best made in conjunction with the outcomes of the broader framework review being undertaken by the AEMC. It is therefore not necessary to amend clause 2.1.2.

### 3.5.6 Final Decision

**The Commission has decided that it is not necessary to amend clause 2.1.2 at this time. The Commission would consider any future decision in conjunction with the outcomes of the broader framework review being undertaken by the AEMC.**

## 3.6 Fault restoration obligations

ElectraNet proposed making the fault restoration obligations with regard to Category 1, 2 and 4 exit points subject to a best endeavours standard.

ElectraNet asserted that experience has demonstrated that it is not possible to comply with the fault restoration obligations of clause 2 of the revised code (ET/07) under all circumstances.

In particular, ElectraNet notes the restoration of line outages within 2 days in the case of Category 1 exit points under clause 2.5.1 (a) (ii), or the restoration of N equivalent line capacity within 12 hours of an interruption in the case of Category 4 exit points under clause 2.8.1 (a) (ii) (B), will not be possible under all reasonably foreseeable circumstances.

A best endeavours requirement would be more appropriate, and would recognise that fault restoration obligations are intended to be an operational standard, not a planning standard driving additional investment.

### *Commission's Draft Decision:*

*The Commission will amend clause 2.8.1(a) (ii) A to reflect reciprocal best endeavour restoration standards for Category 4 line and transformer failures. The Category 1 and 2 exit point restoration standards are unvaried from the current code (ET/06) and the Commission will maintain those standards.*

*A cost benefit approach to setting restoration standards is dependent on outcomes of the AEMC review and would be considered if recommended or mandated.*

### *3.6.1 Energy Consumers Coalition of South Australia*

No comment was provided by ECCSA.

### *3.6.2 ElectraNet*

ElectraNet supported the changes the Commission proposed to make to clause 2.8.1(a) (ii) A. ElectraNet understands that the fault restoration requirements of the ETC remain operational obligations and not planning standards that might otherwise drive uneconomic or inefficient network investment.

ElectraNet contended that it will not be possible to comply with the fault restoration standards under all foreseeable circumstances, and extreme and exceptional situations will still arise when full compliance will not be possible.

ElectraNet noted that it will continue to notify the Commission of such situations as and when they occur.

### *3.6.3 SA Power Networks*

No comment was provided by SA Power Networks.

### *3.6.4 South Australian Council of Social Service*

SACOSS supports the correction of missing descriptors and consequential changes the Commission proposes to make to clause 2.8.1(a) (ii) A.

### *3.6.5 Reasons for decision*

This is not a contentious issue and as such, there appears to be no opposition to ElectraNet's proposed code amendment for fault restoration obligations. The Commission considers it appropriate and reasonable to amend the restoration obligation for category 4 exit points to be a best endeavours requirement as set out in its Draft Decision.

It is noted that ElectraNet also proposed changes to the wording for categories 1 and 2. No such change was proposed by the Commission in its Draft Decision; however, for the reasons above, it is appropriate to adopt "best endeavours" restoration standards for clauses 2.5.1(a) and 2.6.1(a) for line outages within 2 days in those categories, and in Category 4, the restoration of at least "N" equivalent line capacity within 12 hours.

### *3.6.6 Final Decision*

**The Commission will amend clauses 2.5.1(a), 2.6.1(a) and 2.8.1(a) (ii) A to reflect best endeavours restoration standards for line failures.**

### 3.7 *Reclassification of Kanmantoo exit point*

ElectraNet has identified that the replacement of the Kanmantoo substation is required to be undertaken in the 2013-18 regulatory period, based on assessed asset condition and risk, with a scheduled completion date of 2016.

The code lists Kanmantoo as a Category 1 exit point which requires an 'N' equivalent transmission line and transformer capacity to meet 100% of agreed maximum demand.

ElectraNet proposed that the Kanmantoo exit point be reclassified to Category 2 (which would require N-1 transformer reliability). ElectraNet asserts that it would be cost effective, as demonstrated by its cost benefit analysis, to install an additional transformer at an incremental cost of \$4.8 million.

#### *Commission's Draft Decision:*

*ElectraNet's objectives are unclear in the context of proposing to upgrade the Kanmantoo exit point at a cost to all customers when clearly, the code provides for meeting the required reliability level under its current regulatory obligations. Furthermore, the upgrade proposal, though feasible on a cost/benefit basis, does not appear to demonstrate efficient use of assets from a demand perspective. The Commission believes that ElectraNet should consider other options that provide a broader approach to network support for similar Category 1 exit points.*

*The Commission has decided therefore, not to upgrade the Kanmantoo exit point from Category 1 to Category 2 at this time.*

#### 3.7.1 *Submission Energy Consumers Coalition of South Australia*

No comment was provided by ECCSA.

#### 3.7.2 *ElectraNet*

ElectraNet planned a condition-based transformer replacement in its 2013-18 reset proposal due to the transformer age and reliability concerns. ElectraNet acknowledged that Kanmantoo does not serve any mining load and is fully dedicated to the distribution network; i.e., is the sole source of supply for Kanmantoo and Callington townships and surrounding areas.

ElectraNet noted that the proposed 2 x 10MVA 132/33kV transformers is a significant oversupply but agreed that it is only marginally more expensive than using 2 x 5MVA transformers. ElectraNet put the view that using 10MVA transformers as a standard type reduces the long term cost of spares and improves efficiency of on-going transformer maintenance. 2 x 10MVA transformers would supply sufficient capacity to meet demand for 50 years until the next upgrade.

ElectraNet proposed a reclassification of the exit point from Category 1 to Category 2, based on customer benefit rather than the SA Power Networks' network planning. It submitted

that the number of customers (approximately 600, mainly residential) connected to the Kanmantoo substation justified the use of the general South Australian region VCR value, and that sensitivities down to 50% of the value returned a positive NPV.

ElectraNet calculated the net benefit of the increase in the reliability standard using the current SA VCR, and using the lower demand forecast, is \$13.7 million. The cost of the upgrade used in the analysis was for the installation of a transformer at an incremental cost of \$4.3 million.

ElectraNet noted that the need for this project and its timing, scope and cost have been reviewed and accepted by the AER and its consultants for the purposes of revenue-setting for the forthcoming regulatory period. The only proviso is the approval by the Commission for reclassification to Category 2.

ElectraNet asserted that a mobile transformer solution, as suggested by the Commission in its Draft Decision, is no cheaper and would provide no additional benefits.

### *3.7.3 SA Power Networks*

SA Power Networks noted that the original 132/11kV transformer supplying the Kanmantoo substation was aging and in poor condition. ElectraNet replaced the transformer with its spare 132/33/11 kV unit, which has a lower 11kV capacity and, hence, would require replacement by 2016-17.

The regulatory test process would be applied to any upgrade which will include the costs associated with SA Power Networks' upgrade to the 11kV connection. Substations are to comply with the NER and include managing the one or two ElectraNet transformers.

ElectraNet discussed, in joint planning meetings with SA Power Networks, the proposal to convert Kanmantoo substation to 33kV. SA Power Networks' work associated with this project is likely to include a small single-transformer 33/11kV distribution substation to supply the local load and a future 33kV power line to supply customers more remote from the site. SA Power Networks had no objection, in principle, to the conversion of this substation to 33kV if upgraded as a result of a Regulatory Investment Test evaluation under the NER.

### *3.7.4 South Australian Council of Social Service*

SACOSS noted ElectraNet's assertion that a shift of connection Category from 1 to 2 is required in the currently planned refurbishment which means an additional transformer will be required.

SACOSS submitted that the revision of this connection point from Category 1 to 2 should coincide with the regulatory process rather than on an ad-hoc basis so as to ensure a greater opportunity for consumer engagement.

SACOSS noted that the Kanmantoo load is predominantly residential, but justification of expenditure was calculated on a state-wide VCR that exceeds the contemporary VCR value

for residential consumers. SACOSS therefore argued that the project would unlikely to provide a positive cost benefit based on the contemporary residential VCR of \$15,000/MWh.

SACOSS agreed that alternative supply and demand options may be more cost effective than the transformer duplication proposed.

### 3.7.5 Reasons for decision

Since any investment in the network will be subject to a Regulatory Investment Test under the NER, the major issue is the proposed change of this connection point from Category 1 to Category 2, which would change the demand forecast to a lower 10% POE level but triggers the installation of the additional transformer.

ElectraNet asserts that the 600 customers connected to that substation, with a combined peak demand of 2.7MW in 2017-18, would benefit from avoided USE by \$17 million.

The AER engaged Energy Marketing Consulting associates (**EMCa**) to assist with the 2013-18 revenue determination. In its report, EMCa identified the same benefits as ElectraNet, but with the opposite interpretation that the value of the improved reliability benefit would have been sufficient for the customers to have purchased the transformer themselves.<sup>12</sup>

EMCa also noted, in its review, that the USE estimate included unplanned and planned outage time at the same VCR value. Management of planned outage times may reduce the cost to the consumers and lower the benefits. Further, EMCa suggested a local VCR study be carried out to determine a value for customers connected to the Kanmantoo connection point.<sup>13</sup>

ElectraNet indicated that, even with VCR values as low as \$22,884/MWh, there was still a benefit; but, as highlighted by SACOSS, this value is still greater than the “contemporary estimates of the VCR for residential consumers”, and if the value of \$15,000/MWh was used, it may not have a positive NPV. According to SA Power Networks, this benefit included the cost of 11 kV works.

ElectraNet’s Revised Regulatory Proposal states:

*“Whilst the standards of the ETC represent minimum standards, and nothing prevents a higher standard of reliability being delivered on an economic basis, in the interests of transparency, ElectraNet has proposed to ESCOSA that the reliability standard be explicitly reclassified in the ETC.”<sup>14</sup>*

The conversion of the substation to 33kV is not noted in ElectraNet’s Revised Regulatory Proposal. Nor was it highlighted that SA Power Networks indicated that there would be

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<sup>12</sup> EMCa Strata report to AER - Technical review of ElectraNet's revised revenue proposal - April 2013, page 108 paragraph 415

<sup>13</sup> EMCa Strata report to AER - Technical review of ElectraNet's revised revenue proposal - April 2013, page 108 paragraph 417

<sup>14</sup> Page 63 section 11005 Kanmantoo Substation Upgrade, ElectraNet Transmission Network Revised Revenue Proposal 1 July 2013 - 30 June 2018 16 January 2013



additional expenditure on its network to accommodate this change (which may or may not have been included in the benefits calculation).

ElectraNet's argument for the category change is based on customer benefit. That is: the benefit to customers, from the second transformer, significantly outweighs the cost and hence, the expenditure is justified. Further, ElectraNet contends that, to make the decision more transparent, the category change is warranted. It is noted that, given the shift by ElectraNet to a 10% POE AMD, there would be an increase the USE and this would therefore elevate the benefits of duplication.

Solutions for resolving the restoration times and reliability of this site appear to be wider than is perhaps evident on the initial inspection. ElectraNet has other substations of similar age that do not have the *"unreliability and general poor performance"* associated with this location.

As set out in the Commission's Draft Decision, the demand on the substation is relatively low, with a recorded peak demand of 1.4 MW in 2011/12. Although ElectraNet submitted that the incremental additional cost of \$4.3 million to raise the exit point reliability standard to Category 2 makes it appear to be a sensible option, the installation of two 10MVA transformers would result in a severe under-utilisation of assets given the current demand. ElectraNet's Kanmantoo proposal may also conflict with its proposal to reassess reliability standards (refer section 3.4) at the time of a potential breach.

The Commission is of the view that remediation of the Category 1 connection point by ElectraNet would be in the best interests of all customers and therefore does not agree to ElectraNet's proposed reclassification.

### 3.7.6 Final Decision

**The Commission has decided not to reclassify the Kanmantoo connection point from Category 1 to Category 2 point at this time.**

## 4. NEXT STEPS

For the reasons set out in this Final Decision, the Commission has amended the code to take effect from 1 July 2013. That version of the code will be entitled TC/07 (Version 2), being an amended version of TC/07 which, although gazetted, is yet to commence.

The current version of the code, TC/06, remains in force until 30 June 2013.



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